

# United States Resin Company

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## C-8LB H

### STRONG ACID CATION EXCHANGE RESIN

(Designed for use in high purity industrial water applications)

#### Product Description

US Resin's C-8LB H resin is a high-capacity, conventional gel polystyrene strong acid cation exchange resin designed for use in industrial water and waste equipment. Cation resin in hydrogen form removes positive ions such as calcium, magnesium, potassium and sodium by replacing them with hydrogen. When the resin bed is exhausted the positively charged ions begin to pass through the bed. Functionality is returned by regeneration with diluted sulfuric or hydrochloric acid solution. The capacity obtained depends largely on the amount of acid used in the regeneration.

US Resin's C-8LB H resin is also capable of removing in the same way dissolved iron, manganese, and also suspended matter by virtue of the filtering action of the bed.

#### Typical Physical, Chemical & Operating Characteristics

Polymer Structure	Polystyrene 8% cross-linked with Divinylbenzene
Physical Form and Appearance	black spherical beads
Whole Bead Count	90% min.
Functional Groups	Polystyrene sulfonate
Ionic Form (as shipped)	H+
Shipping Weight, approx.	850 g/l (53 lb./ft. <sup>3</sup> )
Mesh Size (U.S. Std.)	16-50
Moisture retention, H+ form	50-56%
Swelling, Na+→H+	5% max.
Total Capacity	1.9 meq/ml
pH Range, Stability	0-14

#### Complies with FDA Regulations for Potable Water Applications

Conforms to paragraph 21CFR 173.25 of the Food Additives Regulations of the F.D.A.

#### Complies with USDA Regulations for Potable Water Systems

Meets standards for use in systems operating under the Federal meat and poultry products inspection program.

#### CHEMICAL AND THERMAL STABILITY

US Resin's C-8LB H resin is insoluble in dilute or moderately concentrated acids, alkalies, and in all common solvents. However, exposure to >1 ppm of free chlorine, "hypochlorite" ions, or other strong oxidizing agents over long periods of time will eventually break down the cross-linking. Temperature over 30 °C (85 °F) will accelerate the oxidation. This will tend to increase the moisture retention of the resin, decreasing its mechanical strength, as well as generating small amounts of extractable breakdown products. Like all conventional Polystyrene sulfonated resins, it is thermally stable to higher than 132 °C (270 °F) in the alkali (for instance, sodium) or alkaline earth (calcium and magnesium) salt forms. The free acid form tends to hydrolyze in water temperatures appreciably higher than 120 °C (250 °F) thereby losing capacity as the functional groups are gradually replaced by hydroxyl groups.